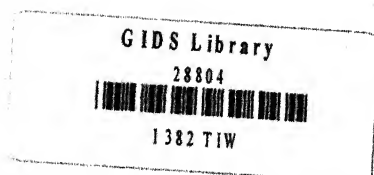


363

Working Paper No. 161

# Export Competitiveness and Trade Cooperation among Newly Industrializing Developing Countries

**R. S. Tiwari**



GIRI INSTITUTE OF DEVELOPMENT STUDIES  
SECTOR O, ALIGANJ HOUSING SCHEME  
LUCKNOW-226 024

I  
382  
TIW

1999



# **EXPORT COMPETITIVENESS AND TRADE COOPERATION AMONG NEWLY INDUSTRIALIZING DEVELOPING COUNTRIES**

**R.S. TIWARI**



**GIRI INSTITUTE OF DEVELOPMENT STUDIES  
Sector 'O', Aliganj Housing Scheme  
LUCKNOW 226 024**

**1999**

382  
TIW



# EXPORT COMPETITIVENESS AND TRADE COOPERATION AMONG NEWLY INDUSTRIALIZING DEVELOPING COUNTRIES

R.S. Tiwari\*

## Abstract

Present paper applying constant-market-share model explores the state of competitiveness in nine Newly Industrializing Developing Countries (NICs) during 1983-85 to 1993-95. Findings of the study show that favourable competitiveness effect observed in traditional sector and non-traditional sector in few of the NICs vis-a-vis the rest of the world is explainable partly to the labour cost advantage, material cost advantage, favourable price competitiveness and the positive role played by trade regime. On the other hand, unfavourable competitiveness observed in few NICs vis-a-vis the rest of the world has been due to all or some of the explanatory factors during the period under review. Based on the favourable competitiveness effect, study offers commodity-wise intra-NICs trade cooperation among themselves.

## I. Introduction : Relevance of the Study

Early literature on trade and development widely recognised collective self-reliance as an important development objective in developing countries. So as to achieve this, industrialisation as a development strategy was intensified in many developing countries in which the

---

\* Fellow, Giri Institute of Development Studies, Lucknow. Present paper is a revised version of the larger reserach study 'Trade Cooperation Among Selected Newly Industrializing Developing Countries : Principles and Policy Options.' Author gratefully acknowledges the generous financial support by the Indian Council of Social Science Research (ICSSR), New Delhi. Also, thanks are due to Prof. V.R. Panchmukhi, Director, Research and Information System for Non-Aligned Nations and other Developing Countries, New Delhi for useful comments and invaluable suggestions. However, author alone is responsible for any errors and omissions.

emphasis was placed on growth of trade. Until mid 1960s, the industrialization-led development strategy was considered as an inward oriented through reorienting indigenous investment, material resources, technology and protective measures, such as, tariffs, quota, taxes and exchange rate appreciation. Since mid 1960s, it was but realised that industries, which grew under protective umbrella also required inputs to sustain their ongoing production activity, the demand for which could not be met from the domestic sources alone. This, in turn, forced developing countries to enhance their import-capacity through increase in export, thus, shifting the emphasis from inward-looking import-substitution to outward-looking export-promotion led industrialisation strategy.

Export promotion strategy, implying the exploitation of micro and macro economic efficiency through trading of factor's efficiency and commodities, though induced country's import-capacity but it was not, however, adequate to meet the increasing import-requirement needed for country's development process. This was due to the various internal supply bottlenecks and external demand constraints. Present paper, therefore, examines the state of competitiveness in newly industrializing developing countries (NICs) attributable in terms of price and non-price factors emanating from external demand and to that on internal supply.

## II. Position of Developing Countries in World

Table-1 compares the export performance of developed market economies (DMEs), developing countries (DCs) and the world, in which volume indices of export ( $y$ ) and value of export ( $y_1$ ) has separately been treated as a function of time ( $t$ ) in semi-logarithmic regression equation ( $\log y = a + bt$ ). Results of statistically reliable regression coefficients show that export performance in DCs lagged behind to that of developed market economies (DMEs) and the world from 1961 to 96. It is, however, dissatisfying that export volume in developing countries grew at a rate of 3 per cent per annum, which was lower than that of 6 per cent of the developed market economies (DMEs) and the world. A similar, more or less, was also the case for export performance in terms of values. Over 1961-96, export in developing countries (DCs) grew at the rate of 4 per cent, which was less than that observed in developed market economies (6 per cent) and in the world (5 per cent). It appears, therefore, that the performance of export in developing countries (DCs) lagged behind to that of developed market economies (DMEs) and the world.

Table-1 : Trends in Export Performance of Developed Market Economies (DMEs), Developing Countries (DCs) and the World : 1961-96

Regression Equation :  $\log y = a + bt$   
 $y$  = Volume Index of Export 1980 = 100

Period	Constant term (b)	Regression coefficient (b)	t=values	$R^2$ = values	F = Statistics
<b>A - Developed Market Economies (DMEs)</b>					
1961-71	3.11	0.09*	38.79	0.99*	891.00
1971-81	4.04	0.06*	16.08	0.97*	291.00
1981-96	4.51	0.06*	15.89	0.95*	266.00
1961-96	3.26	0.06*	30.13	0.97*	1099.33
<b>B - Developing Countries (DCs)</b>					
1961-71	3.61	0.07*	48.59	0.99*	891.00
1971-81	4.47	0.02**	2.10	0.33**	4.43
1981-96	4.42	0.01	1.14	0.40*	9.33
1961-96	3.92	0.03*	6.38	0.71*	40.67
<b>C - World</b>					
1961-71	3.21	0.08*	40.06	0.99*	891.00
1971-81	4.15	0.05*	10.20	0.92*	103.50
1981-96	4.48	0.05*	6.27	0.87*	93.69
1961-96	3.41	0.06*	20.02	0.94*	532.67

Regression Equation :  $\log y_1 = a + bt$   
 $y_1$  = Value of Export 1980 = 100

<b>A - Developed Market Economies (DMEs)</b>					
1961-71	5.63	0.09*	36.26	0.99*	891.00
1971-81	6.57	0.06*	16.58	0.97*	291.00
1981-96	7.08	0.04*	9.30	0.94*	219.33
1961-96	5.81	0.06*	25.71	0.96*	816.00
<b>B - Developing Countries (DCs)</b>					
1961-71	5.60	0.03**	1.94	0.30**	3.86
1971-81	6.11	0.04*	6.00	0.80*	36.00
1981-96	6.29	0.03*	3.48	0.67*	28.42
1961-96	5.62	0.04*	10.62	0.81*	144.94
<b>C - World</b>					
1961-71	6.31	0.06*	7.20	0.85*	51.00
1971-81	7.06	0.05*	11.67	0.94*	141.00
1981-96	7.45	0.04*	6.97	0.89*	113.27
1961-96	6.41	0.05*	21.08	0.94*	532.67

\* Indicates significant at 1 per cent level.

\*\* Indicates significant at 5 per cent level.

Source : International Monetary Fund, International Financial Statistics, and World Bank, World Tables, Various issues.

Table-2 depicts the growth trend for export share with time as worked out in the semi-logarithmic regression equation form ( $\text{Log } y = a + bt$ ). Results of statistically reliable regression coefficients exhibited a higher rate of growth in DMEs vis-a-vis the DCs. DMEs recorded an

Table-2 : Growth trends in Relative Share of Export in Developed Market Economies and Developing Countries : 1961-88 96

Regression Equation :  $\text{Log } y = a + bt$   
 $y$  = Relative Share of Export at 1980 = 100

Period	Constant term (a)	Regression coefficient (b)	T = values	R <sup>2</sup> = values	F = Statistics
--------	-------------------------	----------------------------------	---------------	----------------------------	-------------------

A - Developed Market Economies (DMEs)

1961-71	3.92	0.02*	3.49	0.58*	12.43
1971-81	4.12	0.01*	5.96	0.80*	36.00
1981-96	4.23	0.002	0.95	0.25*	4.67
1961-96	4.00	0.01*	7.55	0.69*	75.68

B - Developing Countries (DCs)

1961-71	3.89	-0.03*	-4.02	0.64*	16.00
1971-81	3.65	-0.01*	-5.57	0.77*	30.13
1981-96	3.44	-0.005	-0.93	0.28**	5.44
1961-96	3.82	-0.02*	-10.75	0.82*	154.89

\* Indicates significant at 1 per cent level.

\*\* Indicates significant at 5 per cent level.

Source : International Monetary Fund, International Financial Statistics, and World Bank, World Tables, Various issues.

improvement by 1 per cent annually, DCs witnessed a deceleration by 2 per cent. Thus, poor performance of developing countries (DCs) vis-a-vis the developed market economies (DMEs) has been underlined in sharing the world export expansion during 1961 to 1996. This portrays the poor performance record of export of developing countries vis-a-vis the developed market economies. It is, therefore, useful to examine the determinants of poor export performance so that corrective measures are undertaken. Towards this direction, constant-market share model provides the analytical scaffolding to our exercise.

### III. Constant-Market-Share Model : Basic Framework

The Constant-Market-Share Model (CMS)<sup>1</sup> is employed to describe a country's export growth. Here, the export performance of a particular country is compared with the 'world average'. For this, we define the following :

$X_{ij}^0$  = Export by the  $i$ th country to the  $j$ th market in the base year, ( $i=1, \dots, n$ ;  $j=1, \dots, m$ );

$X_{ij}^1$  = export by the  $i$ th country to the  $j$ th market in the terminal year, ( $i=1, \dots, n$ ;  $j=1, \dots, m$ );

$X_i^0, X_i^1$  = total export by the  $i$ th country in the base year and terminal year respectively;

$r$  = proportionate change in total world exports;

$r_i$  = proportionate change in world exports of the  $i$ th commodity;

$r_{ij}$  = proportionate change in world export of the  $i$ th commodity to the  $j$ th market.

The total change,  $\Delta X$ , in exports of the  $i$ th country is given by :

$$\Delta X = \sum_{i=1}^n X_i^1 - X_i^o$$

This can be written as :

$$\begin{aligned} \Delta X = & \left( \sum_{i=1}^n r_i X_i^o \right) + \left( \sum_{i=1}^n r_i X_i^o - r_i X_i^o \right) + \\ & \left( \sum_{i=1}^n \sum_{j=1}^m r_{ij} X_{ij}^o - \sum_{i=1}^n r_i X_i^o \right) + \\ & \left( \sum_{i=1}^n X_i^1 - X_i^o - \sum_{i=1}^n \sum_{j=1}^m r_{ij} X_{ij}^o \right). \end{aligned}$$

Therefore, the total change in exports can be decomposed into four components, as follows :

$$1. \text{ World trade effect} = \sum_{i=1}^n r_i X_i^o.$$

$$2. \text{ Commodity composition effect} = \sum_{i=1}^n (r_i X_i^o - r_i X_i^o).$$

$$3. \text{ Market distribution effect} = \sum_{i=1}^n \sum_{j=1}^m r_{ij} X_{ij}^o - \sum_{i=1}^n r_i X_i^o.$$

$$4. \text{ Competitiveness effect} = \sum_{i=1}^n (X_i^1 - X_i^o) - \sum_{i=1}^n \sum_{j=1}^m r_{ij} X_{ij}^o.$$



The magnitude of the world trade effect indicates what the change in exports for the particular country would have been if it had just maintained its share of world exports. A positive/negative sign of the commodity composition effect suggests that the particular country's exports are concentrated in commodity markets which have grown relatively fast/slowly. Similarly, the positive/negative sign of a market distribution effect indicates that exports of a reference country are concentrated in relatively fast/slow growing markets.

The general competitiveness effect is derived essentially as a residual, as indicated above. It is influenced by supply and demand considerations. Both price and non-price factors play a role with domestic factors being the major determinants. The positive/negative sign of the residual implies an improvement/deterioration in the competitiveness of exports.

It will be noted that the CMS model is merely an identity which does not have strong theoretical foundations. Also, as the CMS model does not have a stochastic basis, it cannot be considered useful for future projection of the market shares. Further, it assumes the relative prices of export products are constant. Despite the above limitations, the model helps in identifying the areas wherein the export expansion of a country may be made.



#### IV. Methodology and Data Base

Thus, applying the CMS model, an attempt has been made to explain the role of competitiveness in export performance of NICs. The analysis, it is hoped, will be useful in reflecting upon the relative role of external vis-a-vis the internal factors on the export performance. Analysis covers the more recent periods from 1983-85 to 1993-95. The study covers traditional as well as non-traditional commodities at 1 digit level of SITC classification. This is derived from 2 digit levels of SITC grouping, which in all consists of 55 commodities.

Import-markets considered are 9 from the developed and 12 from the developing world. Countries selected include : U.S.A., Japan, U.K., France, Belgium, Canada, Germany F.R., Switzerland and Italy from the developed, while India, Pakistan, Singapore, Hongkong, Malaysia, Korea Republic, Indonesia, Sri Lanka, Brazil, Thailand, Greece and Turkey from the developing world. The percentage share of imports in these countries from each NICs has been found to be over 60 per cent during 1993-95. Term 'world export' as defined traditionally is the summation of export from developed and developing countries minus export from each individual NICs. Selection of periods and import-markets is based on the readily availability of information from secondary sources, which inter-alia include the various volumes of Commodity Trade Statistics<sup>2</sup>, Year Book of International Trade

Statistics<sup>3</sup>, Year book of Industrial Statistics<sup>4</sup>, Monthly Statistics of Foreign Trade of India<sup>5</sup>, etc.

#### V. Competitiveness Effect

Table-3 describes the state of competitiveness at aggregate level. Competitiveness effect has been found to be favourable in 8, out of 9, NICs vis-a-vis the rest of the world, being 87.83 per cent in Malaysia, 76.54 in Turkey, 67.71 in Singapore, 56.39 in Pakistan, 50.58 in Korea Republic and to 21.81 per cent in Israel. In Argentina, the effect of competitiveness was found to be favourable by 472.02 per cent vis-a-vis the rest of the world. In India, however, the effect of competitiveness has been found to be unfavourable by 6.44 per cent vis-a-vis the rest of the world. It suggests that during 1983-85 to 1993-95, export performance in majority of NICs has improved primarily on account of favourable competitiveness effect.

Competitiveness has also been examined by traditional and non-traditional sector as portrayed in Table-4. During the period 1983-85 to 1993-95, competitiveness effect in traditional sector turns out to be positive in most of NICs except in Argentina, which has portrayed a negative sign of competitiveness vis-a-vis the rest of the world. It has, however, varied in different NICs, being favourable by 104.22 per cent in Malaysia, 76.26 in Turkey, 70.19 in Singapore, 57.13 in Korea Republic, 56.12 in Israel, 45.13 in Brazil,

Table-3 : Competitiveness Effect in Newly Industrializing Developing Countries : 1983-85 to 1993-95

(Value in '000 US \$)

NICs	Competitiveness effect
1. Argentina	-1127.38 (472.02)
2. Brazil	3798.19 ( 44.39)
3. India	- 190.60 (- 6.44)
4. Israel	709.15 ( 21.81)
5. Korea Republic	12626.78 ( 50.58)
6. Malaysia	5564.72 ( 87.83)
7. Pakistan	607.61 ( 56.39)
8. Singapore	6638.86 ( 67.71)
9. Turkey	2899.22 ( 76.54)
Total	31526.55 ( 52.11)

Note : Figures Under bracket denote percentage to change in export during 1993-95 over 1983-85.

Source : Commodity Trade Statistics, United Nations, Year Book of International Trade Statistics, United Nations, Monthly Statistics of Foreign Trade of India, DGCI & S, Calcutta, Various issues.

40.49 in Pakistan and to 12.72 per cent in India. It suggests that favourable competitiveness effect has enhanced the export performance of traditional commodities in majority of NICs vis-a-vis the rest of the world.

Among the non-traditional sector, the effect of competitiveness has been found to be favourable vis-a-vis the

Table-4 : Competitiveness Effect in Traditional and Non-Traditional Sectors in Newly Industrializing Developing Countries : 1983-85 to 1993-95

(Value in '000 US \$)

NICs	Competitiveness effect in :	
	Traditional Sector	Non-Traditional Sector
1. Argentina	-450.83 (183.71)	-676.55 (-10313.26)
2. Brazil	2126.52 ( 45.13)	1671.67 ( 43.48)
3. India	256.93 ( 12.72)	-447.53 (-47.65)
4. Israel	1121.14 ( 56.12)	-411.99 (-32.85)
5. Korea Republic	3095.25 ( 57.13)	9531.53 ( 48.76)
6. Malaysia	4921.96 (104.22)	642.76 ( 39.84)
7. Pakistan	277.84 ( 40.49)	329.77 ( 84.29)
8. Singapore	987.03 ( 70.19)	5651.83 ( 67.29)
9. Turkey	1504.32 ( 76.26)	1394.90 ( 76.84)
Total	13840.16 ( 61.00)	17686.39 ( 46.78)

Note : Figures under bracket denote percentage to change in export during 1993-95 over 1983-85.

Source : Commodity Trade Statistics, United Nations, Year Book of International Trade Statistics, United Nations, Monthly Statistics of Foreign Trade of India, DGCI & S, Calcutta, Various issues.

rest of the world in 6, out of 9 NICs, whereas, in 3 NICs (Argentina, India and Israel) the unfavourable competitiveness has prevailed. The intensity of favourable

competitiveness effect has, however, varied across the different NICs. It has been favourable by 84.29 per cent in Pakistan, 76.84 per cent in Turkey, 67.29 in Singapore, 48.76 in Korea Republic, 43.48 in Brazil and to 39.84 per cent in Malaysia. In sharp contrast to above, there has been unfavourable competitiveness effect in Argentina, India and in Israel vis-a-vis the rest of the world (Table-4). Although export performance in aggregate has had the benefit of improved competitiveness in majority of NICs, a detailed look into the effects of competitiveness effect at the level of product breakdown may be necessary to make an appraisal of competitiveness and hence the efficacy of internal factors and domestic policies.

Among the traditional sector, there was a favourable competitiveness effect vis-a-vis the rest of the world in food and live animals (0.0) in Israel, Korea Republic, Malaysia, Pakistan, Singapore and Turkey; in beverages and tobacco (1.0) in Malaysia and Singapore; in crude materials inedible except fuels (2.0) in Brazil, India, Korea Republic, Malaysia, Pakistan and Singapore; in mineral fuels, lubricants and related materials (3.0) in Brazil, India, Israel, Korea Republic, Malaysia, Singapore and Turkey; in animal vegetable oils and fats (4.0) in Argentina, Brazil, Israel, Malaysia and Pakistan; and in manufactured goods classified by materials (6.0) in all NICs. The competitiveness effect in remaining NICs was found to be unfavourable vis-a-vis the rest of the world.

A similar was also the case in variety of products within the non-traditional sector. For example, competitiveness effect as compared with the rest of the world has been found to be favourable in chemicals (5.0) in Korea Republic, Malaysia, Pakistan, Singapore and Turkey. A similar finding has also been reinforced in machinery and transport equipment (7.0) in Brazil, Korea Republic, Pakistan, Singapore and Turkey and that in miscellaneous manufactured articles (8.0) in Argentina, Brazil, Korea Republic, Malaysia, Pakistan and Turkey. The effect of competitiveness has, however, been found to be unfavourable in remaining NICs vis-a-vis rest of the world (Table-5).

In order to prove it further, additional information has also been provided in Table-6 on competitiveness effect by traditional and non-traditional sectors. The competitiveness effect in traditional sector, turned out to be positive by US \$ 13,840.16 thousand. As compared to this, the gain in competitiveness was more significant in the non-traditional sector, being to US \$ 17,687.39 thousand. Thus, export performance on account of competitiveness effect was found to be more significant in non-traditional than to that in traditional sector. Since present analysis at one digit level of SITC classification is likely to involve an aggregation bias, it would be useful to analyse the nature of competitiveness at greater level of product disaggregation.

Table-5 : Competitiveness Effect in Newly Industrializing Developing Countries at One Digit SITC Groupings :  
1983-85 to 1993-95

(Value in '000' US \$)

SITC Code No.	Commodities	Competitiveness effect in :								
		Argentina	Brazil	India	Israel	Korea Republic	Malaysia	Pakistan	Singapore	Turkey
A - <u>Traditional Sector</u>										
0.0	Food and live animals	-401.49 (-669150.00)	-190.75 (-15.42)	-450.15 (-222.25)	160.80 ( 89.22)	745.12 (67.36)	280.50 (73.45)	12.50 (44.53)	80.60 (55.86)	280.43 (67.95)
1.0	Beverages and tobacco	-20.96 (103.71)	-130.80 (-594.55)	-80.20 (188.17)	- 0.36 (-48.00)	-70.20 (721.48)	10.41 (78.21)	-0.50 (714.29)	50.21 (87.75)	-70.81 (-708.10)
2.0	Crude materials inedible except fuels	-86.59 (119.62)	658.20 (-594.55)	70.07 (34.97)	-50.80 (-153.29)	25.20 (53.15)	1816.15 (82.49)	322.09 (98.22)	80.90 (55.70)	-71.20 (-81.76)
3.0	Mineral fuels lubricants and related materials	-101.29 ( 26.34)	180.30 (-176.56)	75.19 (-32.29)	48.90 (158.25)	510.07 (113.75)	2086.53 (159.42)	-61.81 (79.39)	641.81 (-121.35)	650.80 (119.68)
4.0	Animal vegetable Oils and fats	70.89 (211.61)	250.18 (164.56)	-25.80 (113.96)	0.80 (114.29)	-5.15 (119.77)	290.65 (222.94)	2.86 (148.19)	-20.09 (205.63)	-15.70 (147.28)
6.0	Manufactured goods classified by materials	90.02 ( 27.81)	1359.39 (58.57)	740.45 ( 41.22)	961.80 (54.90)	1890.21 ( 49.35)	450.71 (65.67)	5.70 (1.40)	153.60 (53.26)	730.80 (78.60)
B. <u>Non-Traditional Sector</u>										
5.0	Chemicals	-434.89 (9600.22)	-190.22 (-51.67)	-20.14 (-14.66)	-280.51 (-92.45)	33.80 ( 6.21)	190.96 (80.96)	5.60 (52.53)	433.82 (59.63)	5.80 (5.61)
7.0	Machinery and transport equipment	-301.29 (401.56)	564.93 (27.06)	-342.18 (1714.33)	-40.88 ( -7.48)	8227.45 (78.69)	-60.80 (-2.50)	2.53 (39.16)	5320.20 (78.41)	38.80 (59.66)
8.0	Miscellaneous manufactured articles	59.63 ( 69.24)	1260.90 (90.75)	-85.21 (10.37)	-90.60 (-22.42)	1270.28 (14.86)	512.60 (63.00)	321.64 (85.97)	-102.19 (-11.52)	1350.30 (81.99)

Note : Figures under bracket denote percentage of change in export during 1983-85 to 1993-95.

Source : Commodity Trade Statistics, United Nations, Year Book of International Trade Statistics, United Nations, Various Issues.



Table-6 : Competitiveness Effect By Traditional and Non-Traditional Sectors : 1983-85 to 1993-95

(In '000 US \$)

Sectors	Competitiveness effect
	1983-85 to 1993-95
A. Traditional Sector	13,840.16
B. Non-Traditional Sector	17,686.39
Total	31,526.55

Source: Commodity Trade Statistics, United Nations, Year Book of International Trade Statistics, United Nations, Monthly Statistics of Foreign Trade of India DGCI & S, Calcutta.

#### VI. Competitiveness Effect at Two Digit Levels of SITC Groupings

Over the period 1983-85 to 1993-95, change in export to the favourable competitiveness effect was found to be relatively more significant than that of unfavourable competitiveness effect. For example, number of products with positive sign of competitiveness was more in traditional sector, being 17 each in Brazil and Israel, 23 in Korea Republic, 24 in Malaysia and 20 in Singapore as compared to that with unfavourable competitiveness effect, being 16, 13, 11, 11 and 15, respectively. The findings thus suggest that change in export to the favourable competitiveness effect was more spectacular in majority of traditional products and NICs



vis-a-vis the rest of the world (Table-7).

Table-7 : Positive and Negative Competitiveness Effect in Traditional and Non-Traditional Sectors in Selected Newly Industrializing Developing Countries : 1983-85 to 1993-95

(Value in '000' US \$)

Sl. No.	MICs	Traditional Sector				Non-Traditional Sector			
		Positive competitiveness effect		Negative competitiveness effect		Positive competitiveness effect		Negative competitiveness effect	
		Number of Products	Values	Number of Products	Values	Number of Products	Values	Number of Products	Values
1.	Argentina	16	280.19	20	- 731.02	9	80.34	18	-756.89
2.	Brazil	17	2985.52	16	-859.00	15	2756.32	11	-1084.65
3.	India	15	2407.27	18	-2150.34	8	84.28	18	-531.81
4.	Israel	17	1247.25	13	-126.11	15	3604.45	12	-4016.44
5.	Korea Republic	23	5736.44	11	-2641.19	21	10479.30	5	-947.77
6.	Malaysia	24	11473.85	11	-6551.89	20	942.28	6	-299.52
7.	Pakistan	12	378.20	13	-100.36	16	340.41	9	-10.64
8.	Singapore	20	2365.76	15	-1378.73	18	6110.81	8	-458.98
9.	Turkey	14	4753.06	18	-3248.74	16	1409.17	7	-14.27
Total		18*	31627.54**	15*	-17787.38**	15*	25807.36**	10*	-8120.97**

Note : The number of products and values of competitiveness have been worked out from the Appendix-A.

\* Shows the average number of products from all MICs.

\*\*Indicates the values of competitiveness effect.

Source : Commodity Trade Statistics, United Nations, Year Book of International Trade Statistics, United Nations, Monthly Statistics of Foreign Trade of India, DGCI & S, Calcutta, Various issues.

A similar findings, more or less, has also emerged in the case of non-traditional products as well. For instance, number of products with favourable competitiveness has been found to be more significant, being 15 each in Brazil and Israel, 21 in Korea Republic, 20 in Malaysia, 16 in Pakistan, 18 in Singapore and 16 in Turkey vis-a-vis the products with unfavourable competitiveness, being 11, 12, 5, 6, 9, 8 and 7 respectively. In Argentina and India, however, the number of export products with negative competitiveness effect (18 in each) was found to be more significant than that of the positive competitiveness effect (9 and 8). Thus, change in export in non-traditional sector was relatively more significant on account of favourable competitiveness effect than to that of unfavourable competitiveness effect in majority of NICs vis-a-vis the rest of the world (Table-7). The nature of competitiveness effect at two digit levels of SITC groupings has been portrayed in Appendix-A.

#### VII. Determinants of Competitiveness

Behaviour of competitiveness, as argued earlier, is an outcome of numerous price and non-price factors emanating from internal supply and to that on external demand but are largely influenced by the internal supply conditions of the export-country. These constitute cost conditions of

28804

production, price of the product, level of home demand, marketing strategy and the trade and production policies. On external demand, main factors include: quality of products, purchasing power and taste pattern, public relations, production and trade policies of the import-countries. We may discuss here below the effect of principal factors determining the competitiveness of export-commodities.

#### VII.1 Cost Competitiveness

During 1983-85 to 1993-95, there was a favourable competitiveness effect vis-a-vis the rest of the world in mineral fuels, lubricants and related materials (3.0), animal vegetable oils and fats (4.0), manufactured goods classified by materials (6.0), machinery and transport equipment (7.0) and miscellaneous manufactured articles (8.0) in Brazil; food and live animals (0.0), animal vegetable oils and fats (4.0) and in manufactured goods classified by materials (6.0) in Israel; crude materials, inedible except fuels (2.0), minerals (3.0) and manufactured goods classified by materials (6.0) in Korea Republic; food and live animals (0.0), beverages and tobacco (1.0) and mineral fuels, lubricants and related materials (3.0) in Malaysia; and in food and live animals (0.0), beverages and tobacco (1.0) crude materials (2.0) and mineral fuels (3.0) in Singapore. The favourable competitiveness in animal vegetable oils and fats (4.0) and manufactured goods classified by materials (6.0) in Brazil;

mineral fuels, lubricants and related materials (3.0) in India; and in chemicals (5.0), and machinery and transport equipment (7.0) in Turkey has been due partly to the material cost advantages, while in other above stated products and NICs due partly to the labour cost advantages.

On the other hand, unfavourable competitiveness effect vis-a-vis rest of the world observed in food and live animals (0.0), animal vegetable oils and fats (4.0), chemicals (5.0), machinery and transport equipment (7.0) and miscellaneous manufactured articles (8.0) in India; animal vegetable oils and fats (4.0) in Korea Republic; machinery and transport equipment (7.0) in Malaysia; animal vegetable oils and fats (4.0) and miscellaneous manufactured articles (8.0) in Singapore; and in beverages and tobacco (1.0), crude materials (2.0) and animal vegetable oils and fats (4.0) in Turkey has been partly due to the disadvantages arising on account of labour cost, while that in food and live animals (0.0), beverages and tobacco (1.0), animal vegetable, oils and fats (4.0) and in miscellaneous manufactured articles (8.0) in India; miscellaneous manufactured articles (8.0) in Israel; animal vegetables, oils and fats (4.0) in Korea Republic and Singapore; and in crude materials inedible except fuels (2.0) and animal vegetable oils and fats (4.0) in Turkey partly to the material cost disadvantages (Table-8).

Table-8 : Competitiveness vis-a-vis the Cost Structure in Newly Industrialising Developing Countries : 1983-85 to 1993-95

NICs	1983-85 - 1993-95			
	Products with favourable competitiveness effect due to:		Products with unfavourable competitiveness effect due to:	
	Labour cost advantages (No.)	Material cost advantage (No.)	Labour cost disadvantages (No.)	Material cost disadvantages (No.)
Argentina	-	-	-	-
Brazil	5	2	-	-
India	-	1	5	4
Israel	3	-	-	1
Korea Republic	3	2	1	1
Malaysia	3	3	1	-
Singapore	4	2	2	1
Turkey	-	3	3	2
Overall	18	13	12	9

Source : Year Book of Industrial Statistics, United Nations, Various Issues.

Thus, it is evident that favourable competitiveness observed in numerous products has mainly been the outcome of labour cost advantage, while in others to the material cost advantages. Additional evidences provided in Table-8 suggest

that in 18 products with favourable competitiveness have mainly been due to labour cost advantages. Material cost advantage comes only second in order of importance, which has seemingly explained the favourable competitiveness of 13 products. Thus, advantages on account of labour cost have emerged as a partial explanatory factor for the favourable competitiveness of export in majority of products in NICs.

## VII.2 Price Competitiveness

Price of a product also determines the competitiveness. So as to examine the role of price on competitiveness, methodology suggested by Murty and Shastri<sup>6</sup> has been followed, which is described as hereunder :

$$PC = \frac{EPNS}{EPWS} \cdot 100$$

Where PC, EPNS and EPWS are respectively the price competitiveness of export, price of export-country (N) of Sth commodity and export price of the world of the respective commodity (S).

Export price of a commodity in each NICs has thus been compared with the world. Implicitly, world is assumed as competitor vis-a-vis the each NICs. An increase in export price of the specific NICs for specific commodity relative to

world would thus indicate the fall in price competitiveness and vice-versa. Such an exercise has, however, been undertaken only for 35 traditional commodities and that too is restricted for 1985 and 1992 in view of availability of data from published sources.<sup>7</sup> Commodity Year Book<sup>8</sup> has been used as basic source of information. The similar exercise for non-traditional commodities has been dropped on account of paucity of information.

It may be recapitulated that, during 1983-85 - 1993-95, the sign of competitiveness has been found to be positive in large number of traditional products in Brazil, India, Israel, Korea Republic, Malaysia, Pakistan, Singapore and Turkey vis-a-vis the rest of the world. This may be partly the result of improvement in price competitiveness. The result of price competitiveness worked out in Table-9 provides a strong emprirical support in some NICs. As far example, price competitiveness improved in 17, out of 22 traditional commodities in Brazil. Similarly, price competitiveness in 12 traditional products, out of 19, improved in Malaysia vis-a-vis the rest of the world. In Turkey, improvement in price competitiveness has been recorded in 9, out of 11 traditional commodities vis-a-vis the rest of the world. However, the in price competitive-ness has fell down in majority of traditional products in India, Israel, Korea Republic, Singapore and Pakistan.

Table-9 : Price Competitiveness of Selected Export-Commodities in Newly Industrializing Developing Countries : 1985 and 1992

(Price per metric tonne in US \$)

Sr. No.	Commodities	NICs								
		Argen- tina	Brazil	India	Israel	Korea Republic	Malay- sia	Paki- stan	Singa- pore	Turkey
1.	Bovine meat	L	H	H	-	-	H	-	H	H
2.	Wheat and wheat floor	H	-	H	L	H	H	L	H	H
3.	Rice	H	H	H	-	L	H	H	L	-
4.	Coarse grains	H	L	L	-	-	-	L	H	H
5.	Bananas	-	H	-	-	-	L	H	-	-
6.	Coffee	-	H	L	H	-	H	-	H	-
7.	Coca beans	-	H	-	-	-	H	-	H	-
8.	Coca products	-	H	H	-	-	H	-	L	-
9.	Tea	H	H	H	-	L	L	L	L	L
10.	Spices	-	H	L	L	H	H	H	H	H
11.	Paper	-	H	L	-	H	H	-	H	H
12.	Groundnut oil	H	H	-	-	-	-	-	L	-
13.	Soybeans	L	H	L	-	-	H	-	H	-
14.	Soybean oil	H	H	L	-	-	L	-	L	-
15.	Coconut oil	-	-	-	-	-	U	-	L	-
16.	Palm oil	-	H	L	-	-	H	-	L	-
17.	Tobacco	-	-	H	-	H	-	-	H	-
18.	Natural rubber	-	-	-	-	H	L	-	-	H
19.	Cotton	H	H	H	L	-	-	H	H	H
20.	Jute	-	-	L	-	-	-	-	-	-
21.	Alumina	-	L	H	-	-	-	-	-	H
22.	Aluminium	H	L	-	H	L	-	-	-	-
23.	Copper ore	-	-	-	-	-	L	-	-	-
24.	Refined copper	-	-	-	H	L	-	-	H	H
25.	Lead ore	H	-	-	-	H	-	-	-	-
26.	Lead metal	-	-	-	-	H	H	-	L	-
27.	Manganese ore	-	H	L	-	-	-	-	-	-
28.	Ferro manganese	-	L	-	-	-	-	-	-	-
29.	Nickel unwrought	-	-	-	H	-	-	-	L	-
30.	Phosphate rock	-	-	-	H	-	-	-	L	-
31.	Sulphur	L	-	L	-	L	-	-	L	-
32.	Tin ore	H	-	-	-	-	-	-	H	-
33.	Tin metal	H	-	-	-	-	L	-	L	-
34.	Tungston ore	-	H	-	-	L	-	-	U	H
35.	Crude petroleum	L	-	-	-	-	L	-	L	-

Note : L = Indicates decreased price competitiveness between 1985 and 1992.  
H = Indicates improved price competitiveness between 1985 and 1992.  
U = Indicates unchanged price competitiveness between 1985 and 1992.

Basic Source : Commodity Year Book, United Nations, Various issues.



As far the price competitiveness in India's engineering goods was concerned, it exceeded the international price by 40-60 per cent and in numerous products the price difference even exceeded to 100 per cent.<sup>9</sup> With regard to the non-price factors, it was stressed that export demand of electric motors and transformers lagged behind in world market mainly due to their 'large size', 'heavier weights', 'lower speed' and 'water cooled' with 'horizontal size'. Also, the export demand of diesel engines stagnated mainly due to their 'heavier weights', 'lower speed' and because they were 'water cooled' with 'horizontal size'. On the contrary, foreign made engines were of superior quality with 'higher speed', and 'air cooled' and vertical size.<sup>10</sup> Similarly, packaging of electric fans and sewing machines' compared unfavourably with those of main competitors from Japan and Hongkong,<sup>11</sup> The factors per-se, though important they are, do not provide the complete explanation of export competitiveness in case of some NICs. It is essential, therefore, to trace out factors other than these. Hence, discussion on the role of trade policies becomes inevitable.

### VII.3 Role of Trade Policies

Trade policy determining the export competitiveness embraces numerous quantifiable and non-quantifiable factors. It may, however, be mentioned that policy variables are subject to enormous fluctuations over time in different NICs,

which forbid us to examine their impact in a quantitative precision. In spite of these constraints, we make an attempt herebelow to examine the impact of selected policy variables on export competitiveness.

Over 1983-85 to 1993-95, there was favourable competitiveness effect in various products under traditional sector in Brazil, India, Israel, Korea Republic, Malaysia, Pakistan, Singapore and Turkey, whereas, unfavourable competitiveness effect was observed in Argentina vis-a-vis the rest of the world. Similarly, several products under non-traditional products in Brazil, Korea Republic, Malaysia, Pakistan, Singapore and Turkey portrayed the favourable competitiveness effect, whereas, a reverse was the case in Argentina, India and Israel vis-a-vis the rest of the world.

Major factors under trade regime for competitiveness were the protectionism and neo-protectionism policies pursued hitherto by developed market economies. Discussions held under New International Economic Order (NIEO)<sup>12</sup>, under various GATT rounds and UNCTAD conferences did emphasise the tariff and non-tariff concessions on variety of products' export from developing countries, yet in reality either such concessions were worn off only at the stage of debate and discussions or the extent of concessions thereunder was too insignificant to make any profound impact on the increase of exports from developing to the developed countries. It has thus been concluded that : "Non-tariff distortions of the EC turn out to be very frequent and 90 per cent of them are

discriminatory. Other work confirms the sharp rise in EC protection vis-a-vis developing countries' and the comparatively high 'managed trade' in manufactures. Typically, as in one of the most protectionist and debated selective instrument, the EEC seems to have become more and more a 'champion on protection'. Last but not the least, that verdict grounds on two further peculiarities : (a) the bilateral deals and bargaining power politics; and (b) the selective approach to the GATT safeguard provisions."<sup>13</sup>

Tariff concessions, thus, offered during post Tokyo Round under GATT were generally considered to be symbolic. It was noted that "percentage share of imports received concessions in the total imports was estimated to be not larger than 1.0 per cent in Brazil, 5.9 per cent in Argentina, 5.7 per cent for South Korea and 10 per cent for Malaysia. Thus, product coverage was small and so was the tariff cuts, that is the margin of concession. In Singapore, there appeared no binding for tariff concessions at all."<sup>14</sup> Yet the average tariffs in the industrial countries (United States, United Kingdom, Switzerland, Netherland, Germany, Denmark and Belgium) which ranged between 11 per cent to 32 per cent in 1980, declined at 7 per cent in 1987."<sup>15</sup>

The decline in tariff barriers especially after Tokyo Round on exports from developing countries was seen accompanied by rise in non-tariff barriers. It has been noted that "NTBs are less prevalent on industrial economies

imports of agricultural goods than that from developing economies, but that the reverse is true for manufactures. Nonetheless, developing economies still generally face more barriers to agricultural exports than to manufactures, and since agriculture accounts for a higher share of imports from developing economies than from industrial ones, agricultural protection still contributes to the differential incidence at the aggregate level. In the manufacturing sector, developing economies face more barriers than industrial ones to their large-volume exports, such as, in textiles and footwear, and fewer to their small volume ones, such as, electrical machinery and vehicles. NTBs are relatively expensive on the exports of the developing economies that are major borrowers. For these economies, all three indexes assume values which are 1-2 percentage points higher than those for all developing economies and 7-8 percentage points higher than those for all exporters."<sup>16</sup>

Also, the favourable competitiveness effect in various products under traditional and non-traditional sectors in Brazil, Korea Republic, Malaysia, Pakistan, Singapore and Turkey vis-a-vis the rest of the world might have been conditioned in part by the reforms introduced by the trade regime during 1980s. Table-10 records the recent changes in trade policies. The import surveillance system, introduced in Korea Republic in 1979 was abolished in January 1989 and that the quantitative restrictions affecting imports of 1106 products were eliminated. A three year import liberalisation

Table-11 : Recent Tariff Reductions in Selected NICs

- 
1. Argentina Tariff duties on imports were reduced in 1988 on wide range of products. The average tariff, which was 38.2 per cent in 1988, fell down to 29.4 per cent in 1990 and that ranged from 5 per cent to 40 per cent. In 1991, a new tariff structure was introduced i.e., 11 per cent and 22 per cent advalorem. Import licensing and other non-tariff restrictions were abolished except for 22 items (vehicles and parts, which remain subject to quota).
  2. Brazil Average tariff, which was 37 per cent in 1990 was reduced to 25 per cent in 1991. Suspension of issues of import licences affecting 1200 items was discontinued and the "prohibited list" of products was removed. Company import quotas were eliminated in June 1990.
  3. India Import duties in India under New Economic Policy on large number of raw materials, capital goods and components were drastically reduced. India devalued rupee against dollar and followed the supply-demand determined exchange rate management system. EXIM scrip policy was initiated, under which certain imports were permitted only against export entitlement.
  4. Pakistan The maximum tariff, which was 225 per cent earlier, reduced to 125 per cent in 1990. In July 1988, a programme of reform was initiated which laid emphasis on tariffs than on the non-tariff measures as the main trade policy instrument. Import restrictions are retained on certain products for balance of payment purposes, where as, import licensing has been eliminated on other products as on March 1991.
  5. Korea Republic The maximum surveillance system, introduced in 1979, was abolished since January 1989. Between July 1986 and January 1991, quantitative restrictions affecting imports of 1106 products were eliminated. A three-year import liberalisation programme for 1991-1994 was announced in March 1991, which provided the facility for phasing out of restrictions on 133 agricultural products.
  6. Turkey Tariffs reduced in 1989, and import licensing was abolished in 1990.
- 

Source : United Nations, Trade and Development Report, 1991.

programme (1992-1994) was announced in March 1991, which aimed at phasing out of the restrictions on 173 agricultural products.

Similarly, in Pakistan, maximum tariff of 225 per cent which existed earlier was reduced to 125 per cent in 1990. A programme of reform, which was initiated in July 1988, emphasised the shifting of non-tariff barriers to tariffs as main element in trade policy. Whereas import restriction for certain products was retained for balance of payment purposes, the import licensing for few products was eliminated on March, 1991. In Turkey, tariffs were reduced in 1989, while import licensing was abolished in 1990.<sup>17</sup> A much similar was also the case in Malaysia and Singapore, where trade liberalisation played a vital role for enhancing the production and exports and thereby improving the competitiveness.

India, similarly pursued more forcefully trade liberalization regime under the New Economic Policy since 1991. Under the market determined approach, import-control through licensing was virtually abolished and import-duties were lowered in stages from 150 per cent in 1991 to 110 per cent in 1992 and to 85 per cent in 1993. Duties on capital goods also reduced, which varied from 25 per cent to 75 per cent<sup>18</sup>. Also, India pursued numerous policy stimuli in the form of import-entitlement scheme, duty draw back, cash compensatory supports in association with 'stability' and uncertainty'



clauses for promotion of exports.<sup>19</sup> Thus, owing to the economic reforms, various products in traditional and non-traditional sectors gained competitive ability in majority of NICs vis-a-vis the rest of the world.

#### VIII. Intra-NICs Trade Cooperation Based on Competitiveness

Based on competitiveness criterion, we may now discuss the intra-NICs trade cooperation. This is attempted at 2 digit levels of SITC groupings.

Based on the general findings, Table-11 portrays the block-wise and commodity-wise intra NICs trade cooperation. Given the framework of analysis, first block (Argentina, Korea Republic and Malaysia) may export variety of products (24, 25, 27, 28 and 29) from crude materials inedible except fuels (2.0), (42 and 43) from Animal vegetable oils and fats (4.0) and (61, 64, 66 and 69) from manufactured goods classified by materials (6.0) to the rest of the blocks. Similarly, second block (Brazil, India and Israel), in turn, may export (03, 04, 05, 06 and 09) from food and live animals (0.0) and (32 and 33) from mineral fuels, lubricants and related materials (3.0) to the rest of the blocks. Third block (Pakistan, Singapore and Turkey) reciprocally may export such products as (11 and 12) from beverages and tobacco (1.0) to the rest of the blocks.

Table-11 : Intra-NICs Trade Cooperation by Commodities Based on Favourable Competitiveness Effect Criterion

NICs Block	Export - commodities	Import - countries
<u>A - Traditional Sector</u>		
I		
Argentina, Korea Republic, and Malaysia	Cork and Wood (24), Pulp and waste paper (25), Crude fertilizers, minerals, n.e.s. (27), Metalliferrous ores, scrap (28), Crude animals, vegetables, materials (24), Gas, natural and manufactured (34), Fixed vegetable, oil, fats (42), Processed animal vegetable oils (43), Leather dressed fur etc. (61), Paper, paper board and manufactures (64), Non-metallic minerals manufactures (66), Non-ferrous metals (68) and Metal manufactures (69).	1. Brazil, 2. India, 3. Israel, 4. Pakistan, 5. Singapore and 6. Turkey.
II		
Brazil, India and Israel	Fish and preparations (03), Cereals and preparations (04), Vegetable and fruits (05), Sugar and preparations and honey (06), Miscellaneous edible products (09), coal, coke and brequettes (32) and Petroleum and products (33).	1. Argentina, 2. Korea Republic, 3. Malaysia, 4. Pakistan, 5. Singapore and 6. Turkey.
III		
Pakistan, Singapore and Turkey	Beverages (11) and Tobacco and manufactures (12)	1. Argentina, 2. Korea Republic, 3. Malaysia, 4. Brazil, 5. India and 6. Israel.
<u>B - Non-Traditional Sector</u>		
I		
Argentina, Malaysia, Singapore and Turkey	Plumbing, heating, lighting equipment (81), Clothing (84), Watches and clocks (86), miscellaneous manufactured goods (89).	1. Brazil, 2. Israel, 3. India, 4. Korea Republic and 5. Pakistan



Table-11 (Contd...)

## II

Brazil, India and Israel	Machinery for special industries (72), General industrial machinery (74), Telecommunication, Sound equipments (76) and Road vehicles (78).	1. Argentina, 2. Malaysia, 3. Singapore, 4. Turkey, 5. Korea Republic and 6. Pakistan.
--------------------------	--	--

## III

Korea Republic and Pakistan	Dyes, tanning, colour products (53), Medicinal, pharmaceutical products (54), Fertilizers manufactured (56) and chemical materials, n.e.s. (59).	1. Argentina, 2. Malaysia, 3. Singapore, 4. Turkey, 5. Brazil, 6. India and 7. Israel.
-----------------------------	--	--

Source : Commodity Trade Statistics, United Nations, Year Book of International Trade Statistics, United Nations, Monthly Statistics of Foreign Trade of India, DGCI & S, Calcutta, Various issues.

With regard to non-traditional products, first block may export variety of products (81, 84, 86 and 89) from the miscellaneous manufacturing goods (8.0). to the rest of the blocks. Likewise, second block (Brazil, India and Israel), may, in turn, export some products (72, 74, 76 and 78) from machinery and transport equipment (7.0) to the rest of the blocks. Third block reciprocally may export some products (53, 54, 56 and 59) from chemicals (5.0) to the rest of the blocks.

### IX. Concluding Remarks

Favourable competitiveness effect observed during the period in various products under traditional and non-traditional sectors in majority of NICs was found partly to the country's labour cost advantages and partly to the material cost advantages. In addition to above, the improved price competitiveness was also found as important causal factor for favourable competitiveness effect in majority of traditional items and NICs vis-a-vis the rest of the world. However, a reverse was the case in India, where a part from the fall in price competitiveness, other non-price factors including inefficient marketing network were also held responsible for unfavourable competitiveness in certain non-traditional goods. A much similar was also the case with respect of trade regime. Tariff and non-tariff barriers were seen largely responsive for the fall in competitiveness of various products under traditional and non-traditional sectors. However, liberalised internal production and trade policies in selected NICs exerted favourable influence for enhancing the export competitiveness.

Based on the competitiveness criterion, the formation of intra-NICs trade cooperation by blocks has also been considered. It is suggested that first block may export some products from crude materials inedibles except fuels (2.0), animal vegetable oils and fats (4.0) and manufactured goods (6.0) to the rest of the blocks. Reciprocally, second block

may export some products from food and live animals (0.0) and mineral fuels, lubricants and related materials (3.0) to the rest. Similarly, third block may export some products from beverages and tobacco (1.0) to rest of the blocks. Within the non-traditional sector, first block may export some products from miscellaneous manufactured article, to the rest; second block from machinery and transport equipments (7.0) to the rest; and that of third block from chemicals (5.0) to the rest of the blocks.

# REFERENCES

1. Kojima, Kiyoshi, "The Pattern of Triangular Trade Among the USA, Japan and South-East Asia", The Developing Economies, No.1, March-August 1962, pp.84-91; Tyzzynski, H., "World Trade in Manufactured Commodities, 1899-1950", The Manchester School of Economic and Social Studies, Vol.XIX, No.3, September 1951; Baldwin, R.E., "The Commodity Composition of Trade: Selected Industrial Countries, 1890-1954", The Review of Economics and Statistics, Vol.XL, No.1, Part-2, Supplement, February 1958; Spiegelglas Stephen, "World Exports of Manufactures 1956 Vs 1938", The Manchester School of Economic and Social Studies, Vol.XXVII, No.2, 1959; Richardson, J.D., "Constant Market Share Analysis of Export Growth", Journal of International Economics, Vol.1, 1971, pp.227-239; Narvekar, P.R., "The Role of Competitiveness in Japan's Export Performance 1954-58", International Monetary Fund Staff Paper, November 1960, pp.86-99; Tiwari, R.S., "Constant-Market-Share Analysis of Export Growth : The Indian Case", Pakistan Journal of Applied Economics, Vol.IV, No.2, 1985, pp.101-118.
2. United nations, Commodity Trade Statistics, Various Issues.
3. United Nations, Year Book of International Trade Statistics, Various issues.
4. United Nations, Year Book of Industrial Statistics, Various Issues.
5. DGCI & S, Calcutta, Monthly Statistics of Foreign Trade of India, Various issues.
6. Murty, V.N. and Shastri, V.K., "Elasticities of Demand for Certain Indian Imports and Exports", Sankhya, Vol.II, Parts 3 and 4, 1951, pp.321-322; Murty, V.N. and Shastri, V.K., "Foreign Demand for Indian Exports", Reserve Bank of India Bulletin, 1950.
7. op.cit, 21.
8. United Nations, Commodity Year Book, 1991.
9. Patil, R.H., "Exports of Engineering Goods : Problems and Prospects", Reserve Bank of India Bulletin, Vol.24, No.10, 1970, p.1715.
10. Frankena, Mark, op.cit, 3, pp.249-264.
11. Rao, C.P., Export Marketing in India : Problems, Practice and Impact, Balgovind, Ahmedabad, 1970, pp.87-88.

12. Yeats, Alexander, J., Trade Barriers Facing Developing Countries, Macmillan, 1979, pp.205-211.
13. Lewis, J.R., "Primary Exporting Countries", in Chenery and Srinivasan, 1988, World Bank, World Development Report, 1991, pp.96-103.
14. Tiwari, R.S., "India's Export Performance : Problems And Policy Responses", India Quarterly, Vol.XLVIII, Nos. 1 & 2, January-June, 1992, pp.31-48.
15. Furstenberg, George, M.Von and Jeon, Bang Nam, "The 'New' Protectionism : Its Theoretical Rationales and Political Implications in North and South", (Ed. Hans Singer, Neelamber Hatti and Rameshwar, Tandon) in New Protectionism and Restructuring, New World Order Series, Part I, Ashish Publishing House, New Delhi, 1988, pp.260-293.
16. Lorenz, Detlef, "Industrial Imports from the Asian NICs, Principal Adjustment Problems and European Strategies of Protectionism", (Ed. Hans Singer, Neelamber Hatti and Rameshwar Tandon) in New Protectionism and Restructuring, Part I, New World Order Series, Ashish Publishing House, New Delhi, 1988, p.450; Olechowski, A and Sampson, G., "Current Restrictions in EEC, the United States and Japan", Journal of World Trade Law, Vol.14, 1980; Page S., "Protectionism and its Consequences for Europe", Journal of Common Market Studies, Vol.20, 1981, pp.17-40; Pelkmans, J., "The European Community and the Newly Industrializing Countries", Journal of European Integration, Vol.IV, 1981, pp.135-166.
17. Nogues, J.J., Olechowski, A. and Winters, L.A., "The Extent of Non-tariff Barriers to Industrial Countries, Imports", The World Bank Economic Review, Vol.1, No.1, 1986, p.193.
18. Ibid.
19. See for instance, Kumar, Arun, "New Economic Policies : Prospects for the Industrial Sector , Economic Growth & Social Change, September, 1993, pp.32-55; Rangrajan, C., "India's Balance of Payment: The Emerging Dimensions", Reserve Bank of India Bulletin, January 1994, pp.30-32; Adiseshiah, M.S., "Foreign Investment and Liberalisation", Yojana, Vol.38, Nos.14 and 15, August 15, 1994, pp.30-32; Patel, I.G., "New Economic Policies : A Historical Perspective", Economic and Political Weekly, Special Article, January 11, 1992, pp.41-46; Singh, A.K., Liberalisation, Growth Strategy and the Present Economic Crisis, W.P. No.115, Giri Institute of Development Studies, Lucknow; Government of India, Ministry of Finance, Department of Economic Affairs, Economic Reforms : Two Years After and the Task A Head, Discussion paper.

Appendix-A : Sub-Sector wise Competitiveness Effect of Exports  
in Newly Industrializing Developing Countries :  
1983-85 to 1993-95

(Value in '000 US \$)

SITC Nos	Sub-Sectors	Argentina	Brazil	India
<u>A - Traditional Sector</u>				
00	Live animals for food	-2.95	0.30	7.83
01	Meat and preparations	- 42.59	-101.35	--
02	Dairy products, birds eggs	-6.78	-1.37	-326.78
03	Fish and preparations	-24.19	103.68	18.34
05	Vegetables and fruits	-217.14	-291.70	-84.95
06	Sugar and preparations and honey	-35.20	-43.43	-17.32
07	Coffee, tea, coca and spices	-20.79	18.25	-46.84
08	Feeding stuffs for animals	-59.44	117.93	-0.43
09	Miscellaneous edible products	7.59	6.94	-
0.0	Food and live animals	-401.49	-190.75	-450.15
11	Beverages	-1.67	-114.55	0.54
12	Tobacco and manufacturers	-19.29	-16.27	-80.74
1.0	Beverages and tobacco	-20.96	-130.80	-80.20
21	Hides, skins, furs undressed	-6.75	-1.24	-11.08
22	Oil seeds oleaginous frt	4.29	312.76	-2.20
23	Rubber crude	1.28	-14.56	44.41
24	Cork and wood	30.49	25.52	-15.33
25	Pulp and waste paper	43.58	64.96	-33.80
26	Textile fibres and waste	-122.00	26.81	282.10
27	Crude fertilizers, minerals, nes	2.69	60.97	319.98
28	Metalliferrous ores, scrap	10.19	194.31	623.63
29	Crude animals, vegetable, mat, nes.	-50.36	-11.33	-1137.64
2.0	Crude material inedible except fuels	- 86.59	658.20	70.07

## Appendix-A (contd....)

32	Coal, coke and briquettes	-10.10	0.22	2.56
33	Petroleum and products	-96.73	180.59	72.63
34	Gas, natural and manufactured	5.54	-0.51	--
35	Electric current	--	--	--
<hr/>				
3.0	Mineral fuels, lubricants and related materials	-101.29	180.30	75.19
<hr/>				
41	Animal oils and fats	-6.48	248.54	0.57
42	Fixed vegetable oil, fats	75.96	1.64	-24.71
43	Processed animal, vegetable oils, etc.	1.41	--	-1.66
<hr/>				
4.0	Animal vegetable oils and fats	70.89	250.18	-25.80
<hr/>				
61	Leather, dressed fur, etc	7.30	-20.78	178.11
62	Rubber manufactures, nes	-0.33	-28.51	35.79
63	Wood, cark manufactures, nes	-0.21	-6.21	-50.87
64	Paper, paper board and manufactures	0.74	-44.21	-2.34
65	Textile, yarn, fabrics, etc.	-2.06	44.14	152.31
66	Non-metal minerals manufactures, nes	0.01	-14.23	740.80
67	Iron and steel	84.77	1577.94	-192.50
68	Non-ferrous metals	-5.96	-145.54	0.30
69	Metal manufactures	5.76	-3.21	-121.15
<hr/>				
6.0	Manufactured goods classified by materials	90.02	1359.39	740.45
<hr/>				
B - Non-Traditional Sector				
51	Organic chemicals	-75.66	-2.89	28.38
52	Inorganic chemicals	-1.90	6.72	-17.13
53	Dyes, tranning, colour products	-20.93	-0.58	17.12
54	Medicinal, pharmaceutical products	-306.38	-199.67	-53.33
55	Perfume, cleaning etc. products	-6.14	-18.03	1.26
56	Fertilizers manufactured	-0.41	-3.47	-1.00
57	Explosives, pyrotech products	0.08	1.21	-0.27
58	Plastic materials, nes	4.09	15.25	6.01
59	Chemicals materials, nes	-27.64	11.24	-1.18
<hr/>				
5.	Chemicals	-434.89	-190.22	-20.14
<hr/>				



## Appendix-A (contd....)

71	Power generating equipment	-21.69	-335.78	-16.60
72	Machinery for special industries			
73	Metal working machinery	-38.70	134.43	1.56
74	General industrial machinery, nes	13.87	-6.78	-11.51
75	Office machinery and equipments	-21.87	161.41	-31.84
76	Telecommunication, sound equipments	-141.89	-448.84	-23.29
77	Electric machinery nes etc.	-2.03	281.13	0.02
78	Road vehicles	-2.49	-34.97	-32.46
79	Other transport equipment	-12.77	654.78	-19.30
		-73.72	159.55	-208.76
7.0	Machinery and transport equipment			
		-301.29	564.93	-342.18
81	Plumbing, heating, lighting equipment			
		1.79	14.63	-19.04
82	Furniture and fixtures			
83	Travel goods and hand bags	-0.30	9.69	-2.27
84	Clothing	0.33	-30.19	7.74
85	Footwear	2.28	63.98	-35.87
86	Watches and clocks	43.45	1171.68	22.19
87	Precision instruments nes	11.47	--	--
88	Photo equipments, optical goods etc.	-1.75	-39.51	-6.31
89	Miscellaneous manufactured goods nes	-0.62	69.24	-4.43
		2.98	1.38	-47.22
8.0	Miscellaneous manufacturing articles			
		59.63	1260.90	-85.21



## Appendix-A (contd....)

		Israel	Korea Republic	Malaysia	Pakistan
<u>A - Traditional Sector</u>					
00	Live animal for food	6.13	22.74	-1538.33	--
01	Meat and preparations	-1.28	24.76	-55.53	-0.09
02	Dairy products, birds eggs	-2.86	-	-535.94	--
03	Fish and preparations	-2.34	-15.76	2782.79	10.02
04	Cereals and preparations	0.94	71.24	698.53	2.31
05	Vegetables and fruits	151.38	633.79	-571.81	-3.68
06	Sugar and preparations and honey	1.02	224.13	-3403.50	-1.23
07	Coffee, tea, coca and spices	-2.63	68.98	--	1.70
08	Feeding stuffs for animals	-0.50	26.70	-147.25	3.47
09	Miscellaneous edible products	10.94	-311.46	3051.54	--
0.0	Food and Live Animals	160.80	745.12	280.50	12.50
11	Beverages	-0.36	22.24	10.81	--
12	Tobacco and manufacturers	-	-92.44	-0.40	-0.50
1.0	Beverages and Tobacco	-0.36	-70.20	10.41	-0.50
21	Hides, skins, furs undressed	-	-0.39	0.40	-2.26
22	Oil seeds oleaginous frt	0.72	-0.38	-83.98	-2.47
23	Rubber crude	-	-3.07	-189.04	--
24	Cork and wood	-	22.70	1986.87	-0.40
25	Pulp and waste paper	-40.84	0.19	1.31	--
26	Textile fibres and waste	-6.33	-10.39	-4.46	347.84
27	Crude fertilizers, minerals, nes	1.66	0.64	4.47	-2.42
28	Metalliferous ores, scrap	3.18	12.79	94.95	4.92
29	Crude animals,vegetable,mat,nes.	-9.19	3.11	5.63	-23.12
2.0	Crude material inedible except fuels	-50.80	25.20	1816.15	322.09
32	Coal, coke and briquettes	-	-	-	-
33	Petroleum and products	48.90	1.82	0.22	-61.81
34	Gas, natural and manufactured	-	511.66	992.01	-
35	Electric current	-	-3.41	1114.30	-
3.0	Mineral fuels, lubricants and related materials	48.90	510.07	2086.53	-61.81

## Appendix-A (contd....)

41	Animal oils and fats	0.10	0.03	0.31	-
42	Fixed vegetable oil, fats	0.55	-4.10	287.11	2.86
43	Processed animal, vegetable oils, etc.	0.15	-1.08	3.23	-
4.0	Animal Vegetable Oils and Fats	0.80	-5.15	290.65	2.86
61	Leather, dressed fur, etc	2.79	310.83	3.60	-1.84
62	Rubber manufactures, nes	-33.78	110.61	25.04	0.01
63	Wood, cark manufactures, nes	-0.68	-946.11	39.90	0.02
64	Paper, paper board and manufactures	17.73	409.23	38.51	-0.02
65	Textile, yarn, fabrics, etc.	442.18	1896.31	-21.65	7.72
66	Non-metal minerals manufactures, nes	509.66	521.53	84.91	0.03
67	Iron and steel	-18.92	-1252.60	185.70	-0.52
68	Non-ferrous metals	-6.40	285.89	72.49	-
69	Metal manufactures	49.22	554.52	22.21	0.30
6.0	Manufactured goods classified by materials	961.80	1890.21	450.71	5.70
<b>B - Non-Traditional Sector</b>					
51	Organic chemicals	4.85	-8.45	81.06	-5.85
52	Inorganic chemicals	-75.64	-5.28	3.62	0.54
53	Dyes, tanning, colour products	-3.15	3.96	3.13	0.08
54	Medicinal, pharmaceutical products	104.65	4.58	-	0.34
55	Perfume, cleaning etc. product	4.25	-0.89	5.42	-0.15
56	Fertilizers manufactured	68.84	0.06	20.20	9.19
57	Explosives, pyrotech products	-68.22	0.49	0.19	-
58	Plastic materials, nes	-216.36	35.50	4.24	0.82
59	Chemicals materials, nes	-99.73	3.83	73.10	0.63
5.	Chemicals	-280.51	33.80	190.96	5.60

## Appendix-A (contd....)

71	Power generating equipment	1495.38	111.88	7.64	0.10
72	Machinery for special industries	341.37	66.57	12.56	0.02
73	Metal working machinery	168.95	-2.69	0.05	-0.03
74	General industrial machinery, nes	-126.39	351.11	21.49	0.11
75	Office machinery and equipments	-941.77	1202.94	-9.43	0.18
76	Telecommunication, sound equipments	940.62	1409.01	189.04	0.02
77	Electric machinery nes etc.	370.18	1363.73	-265.95	-0.09
78	Road vehicles	33.15	3206.32	-15.10	2.32
79	Other transport equipment	-2322.37	518.58	-1.10	-0.10
<hr/>					
7.0	Machinery and Transport Equipment	-40.88	8227.45	-60.80	2.53
<hr/>					
81	Plumbing, heating, lighting equipment	-1.41	47.70	1.63	-0.03
82	Furniture and fixtures	-3.85	65.79	-4.35	-0.35
83	Travel goods and hand bags	0.23	260.72	9.08	3.19
84	Clothing	-69.39	-930.46	410.45	321.66
85	Footwear	4.45	49.82	-3.59	-1.26
86	Watches and clocks	0.20	-	0.27	-
87	Precision instruments nes	55.09	62.74	40.32	0.42
88	Photo equipments, optical goods etc.	12.24	136.18	14.68	0.79
89	Miscellaneous manufactured goods nes	-88.16	1577.79	44.11	-2.78
<hr/>					
8.0	Miscellaneous manufacturing articles	-90.60	1270.28	512.60	321.64
<hr/>					

## Appendix-A (contd....)

		(Value in '000 US \$)	
		Singapore	Turkey
<u>A - Traditional Sector</u>			
00	Live animals for food	0.93	-0.26
01	Meat and preparations	0.56	-12.48
02	Dairy products, birds eggs	-5.37	0.96
03	Fish and preparations	16.85	43.52
04	Cereals and preparations	-8.22	15.75
05	Vegetables and fruits	-3.43	204.93
06	Sugar and preparations and honey	-2.56	12.47
07	Coffee, tea, coca and spices	-19.18	17.12
08	Feeding stuffs for animals	28.76	0.50
09	Miscellaneous edible products	72.26	-2.08
0.0	Food and live animals	80.60	280.43
11	Beverages	25.75	-6.40
12	Tobacco and manufacturers	24.46	-64.41
1.0	Beverages and tobacco	50.21	-70.81
21	Hides, skins, furs undressed	-62.83	-0.26
22	Oil seeds oleaginous frt	-0.60	1.46
23	Rubber crude	-680.14	-1.39
24	Cork and wood	288.44	0.36
25	Pulp and waste paper	65.93	-
26	Textile fibres and waste	47.02	-151.16
27	Crude fertilizers, minerals, nes	-101.01	56.12
28	Metalliferrous ores, scrap	239.78	25.66
29	Crude animals, vegetable, mat, nes.	284.31	-1.99
2.0	Crude material inedible except fuels	80.90	-71.20

## Appendix-A (contd....)

32	Coal, coke and briquettes	-0.31	-
33	Petroleum and products	635.20	650.80
34	Gas, natural and manufactured	-	-
35	Electric current	6.92	-
<hr/>			
3.0	Mineral fuels, lubricants and related materials	641.81	650.80
<hr/>			
41	Animal oils and fats	-	2.80
42	Fixed vegetable oil, fats	-24.89	-18.50
43	Processed animal, vegetable oils, etc.	4.80	-
<hr/>			
4.0	Animal vegetable oils and fats	-20.09	-15.70
<hr/>			
61	Leather, dressed fur, etc.	-0.58	-20.53
62	Rubber manufactures, nes	6.41	-133.59
63	Wood, cork manufactures, nes	-68.09	-22.37
64	Paper, paper board and manufactures	123.07	-25.77
65	Textile, yarn, fabrics, etc.	-194.73	-1540.73
66	Non-metal minerals manufactures, nes	-206.79	-592.69
67	Iron and steel	83.65	3720.61
68	Non-ferrous metals	102.09	-392.77
69	Metal manufactures	308.57	-261.36
<hr/>			
6.0	Manufactured goods classified by materials	153.60	730.80
<hr/>			
B - <u>Non-Traditional Sector</u>			
51	Organic chemicals	79.10	-0.06
52	Inorganic chemicals	5.22	-0.03
53	Dyes, tanning, colour products	-0.64	-
54	Medicinal, pharmaceutical products	15.20	0.08
55	Perfume, cleaning etc. product	-81.46	-
56	Fertilizers manufactured	3.66	-0.04
57	Explosives, pyrotech products	0.61	5.82
58	Plastic materials, nes	323.93	0.03
59	Chemicals materials, nes	88.20	-
<hr/>			
5.	Chemicals	433.82	5.80
<hr/>			

## Appendix-A (contd....)

71	Power generating equipment	9.40	-9.04
72	Machinery for special industries	8.98	1.84
73	Metal working machinery	0.19	1.61
74	General industrial machinery, nes	229.38	4.83
75	Office machinery and equipments	2310.16	0.89
76	Telecommunication, sound equipments	-80.91	7.22
77	Electric machinery nes	2758.62	13.08
78	Road vehicles	29.00	21.56
79	Other transport equipment	55.38	-3.19
<hr/>			
7.0	Machinery and Transport Equipment	5320.20	38.80
<hr/>			
81	Plumbing, heating, lighting equipment	-3.09	6.83
82	Furniture and fixtures	-54.30	-1.26
83	Travel goods and hand bags	-2.79	14.34
84	Clothing	-37.95	1300.29
85	Footwear	1.02	1.34
86	Watches and clocks	-	-
87	Precision instruments nes	69.13	4.57
88	Photo equipments, optical goods etc.	-197.84	-0.65
89	Miscellaneous manufactured goods nes	123.63	24.84
<hr/>			
8.0	Miscellaneous manufacturing articles	-102.19	1350.30
<hr/>			

Competitiveness effect has ben measured by the following formula:

$$\sqrt[n]{\prod_{i=1}^n (X_i^1 - X_i^0)} - \sqrt[n]{\prod_{i=1}^n \prod_{j=1}^m r_{ij} X_{ij}^0} .$$

Source: Commodity Trade Statistics, United Nations, Year Book of International Trade Statistics, United Nations, Monthly Statistics of Foreign Trade of India, DGCI&S, Calcutta, Various issues.